REPORT OF THE GLOBAL SYMPOSIUM ON PLANT PEST SURVEILLANCE

29 October – 2 November, 2012

Anyang, Seoul, Republic of Korea

Executive summary

This symposium was established to develop assistance for countries in the implementation of International standard on phytosanitary measures (ISPM) 6: *Guidelines for surveillance*. It also set up for the first time priority setting for the development of manual guides based on comprehensive questionnaire results and manual framework description by an expert group with global representation.

Countries were to be assisted in the production of national manuals on surveillance. This was done by:

- Identifying the priority areas for attention. Information gathered by the IRSS questionnaire on ISPM 6 was used for this purpose.
- With these areas identified, manual frameworks were constructed by the meeting participants. These frameworks contained chapter headings with additional outline material included as appropriate.

Three basic areas of manual frameworks on surveillance were covered. These were:

- Surveillance operational guidance
- Surveillance technical support
- Surveillance management support.

Under these headings, twenty manual frameworks were constructed:

1. Plant pest surveillance development
2. Training manual guide for field surveys
3. Information sharing and reporting (including warning)
4. Auditing and verification
5. Databases
6. Response surveillance (plan/planning) including delimitation and trace-back
7. Prioritisation – target pests
8. Trapping
9. Sampling and inspection
10. Procedures for traceability
11. Operational mapping/modelling
12. Crop loss-damage assessment
13. Response threshold

14. Plant pest diagnostics
15. Surveillance tools
16. Information management
17. Training (lab procedures and diagnostics)

18. Policy and management

19. Financial mechanisms
20. Training

Manual guides will be produced by the International review and support system (IRSS) of the International Plant Protection Convention (IPPC) when sponsors can be found to fund the employment of experts. The guides will act as basis material for countries to develop their own national surveillance manuals.

The meeting participants proposed future action for the reporting of the results of the meeting to the Commission for Phytosanitary Measures (CPM) and related meetings and the production of manual frameworks for ISPMs concerning pest free areas, pest status, pest reporting and pest lists. Participants also recognised the usefulness of the procedure in developing practical documents that can assist countries implement international standards. This reflected the work of FAO in developing systems that can impact within countries.

1. WELCOME TO PARTICIPANTS

The APPPC symposium on pest surveillance, which was held from 29 October to 2 November 2012 in Anyang, Rep. of Korea, was attended by about 50 experts from 28 countries (19 members of APPPC together with 3 non APPPC members of from the region, 5 delegates from Africa, Caribbean and Latin America, Europe and Central Asia, Near East and North America, 2 from IPPC Secretariat) as well as 6 resource persons from Australia, New Zealand and USA. The main purpose of the symposium is to prepare for the development of guidance on ISPM 6: *Guidance for Surveillance* in the form of manual guidelines.

1.1 Welcome remarks by Korea

Commissioner Yongho Park from Animal, Plant and Fisheries Quarantine and Inspection Agency, Ministry for Food, Agriculture, Forestry and Fisheries, Republic of Korea (MIFAFF) QIA Head Office, Seoul welcomed participants to Korea. Dr Park said that the symposium would coordinate the results of the regional workshops on ISPM 6. It would lead to the development of manual guidelines through discussion and the exchange of views.

1.2 Welcome speech by FAO

Dr Piao welcomed all participants from around the world to the meeting. He described the events leading up to this meeting. The symposium arises from the work of the APPPC and the questionnaire circulated to all IPPC members by the Implementation Review and Support System (IRSS). Regional meetings were set up by the IRSS to discuss the questionnaire results and to determine the guidance needed by countries for the implementation of ISPM 6.

Dr Piao described how the IPPC and its work fitted into the FAO work programme. Detection and prevention of trans-boundary threats to food production, health and the environment is one of the focus areas of FAO where it shares its experience, expertise and knowledge to achieve results and impact on the ground. The IPPC and its international standards for phytosanitary measures (ISPMs) provide a basis for policy and regulatory frameworks for managing pest risks associated with food and agriculture including the environment.

While members require effective international frameworks and standards to support appropriate national action, there is also a need for extensive technical assistance for the improvement of capacity in implementation of ISPMs. The results of this symposium, Dr

Piao said, would provide training manuals and programmes for the implementation of ISPM 6: *Guidelines for surveillance*. These outputs will be the result of a significant joint initiative of the APPPC and IPPC contributing to implementation of the strategic objectives of FAO.

Dr Piao thanked the QIA staff for all their efforts in preparing for this meeting.

Dr Eung-Bon Kim, Director General of the Department of Plant Quarantine (QIA) was introduced to the meeting.

Dr Kyu-Ock Yim, Korea described the logistics of the meeting. Dr Yim noted the increase in the participant numbers that showed interest in the subject of the meeting. The nature of the meeting gift was explained.

1.3 Election of Chair and Rapporteur

Mr Dong-Hyoun Baek, Deputy Director, Export Management Division, QIA was elected as chair and Dr John Hedley, New Zealand as rapporteur. Mr Baek wished the participants a successful meeting.

2 PREPARATION FOR PRODUCTION OF MANUAL FRAMEWORKS

2.1 Introductions

The participants introduced themselves.

2.2 Aims of the meeting

Dr Hedley reiterated the aims of the meeting outlining the areas of work:

- the topic priority selection for IPPC manual guides. The information gathered from the questionnaire and the regional meetings on ISPM 6 will be used for this.
- the production of manual frameworks. The frameworks consist of chapter headings with supporting information where this is appropriate.
- the manual frameworks will be used as the basis for IPPC manual guides. The manual frameworks will have been prepared by national officials and will represent what countries want to see in the manual guide.

After the meeting:

- the IRSS will use donor funds to employ expert contractors to produce the manual guides.
- the manual guides will then act as a basis for the production of national manuals by individual countries. The national manuals will contain surveillance information based on that in the manual guidelines, reflect the national requirements of the country involved and help that country implement ISPM 6.

The symposium participants listed areas of priority for the production of manual frameworks, worked on manual frameworks producing an annotated contents list for the topics considered. Each of these took the form of a list of chapter headings with a suggested outline of what information could be included in the chapter. For convenience in the examination of subject areas, the general topic of surveillance was studied under three basic headings:

- Surveillance operational guidance

- Surveillance technical support
- Surveillance management support.

This is the first time such comprehensive information (from the analysis of the questionnaire results) has been available when reviewing an ISPM and when listing areas of priority for the production of manual frameworks. Also, this is the first time a procedure involving priority setting, manual frameworks and, later, manual guides has been used for material for the implementation of an ISPM.

2.3 Introduction to the work of the IRSS

Orientation was discussed by Mr Orlando Sosa (IRSS, IPPC Secretariat). Mr Sosa noted that the responses to the questionnaire sent to all IPPPC member countries were variable at times – but the results have given a reasonable picture of the situation with ISPM 6 in countries. The comprehensive documentation presented by the IRSS was noted (see references).

A series of questions were developed by the IRSS staff from the questionnaire results and presented to the meeting. The Power Point display for this discussion was included in the meeting documentation. Thirty best practice cases were received. The six themes of these pest practices were noted.

Mr Sosa noted that the policy management sectors of surveillance were a constant feature of the remarks made in the questionnaire responses.

The meeting discussed the Figure 13 in the document ISPM 6 (1997): Guidelines for Surveillance: Review of potential areas for technical assistance /capacity development. Mr Sosa mentioned the flaw in the survey design that caused the result on the section on awareness. The responses relating to management were noted. Participants went through Table 1 and viewed the references to the management of surveillance that were inserted by the IPPC Secretariat.

2.4 Questionnaire and results discussion

The results were presented in the 8 major sections of the survey from the Report on activity carried out for ISPM 6 (1997): Guidelines for surveillance prepared by the IRSS. Comments on the various sections included:

- Policy and legislative environment – these are not limited to regulated pests. Other agencies are also mandated to perform surveys. 59% of countries have documented guidelines.
- Organisation structure, competencies and culture – 50% have pest surveillance programmes
- Documented procedures – computerised systems used in 51 % countries, and 45% have documented systems.
- General surveillance – many databases are not easily accessible.
- Specific surveys – 62% have manuals for specific surveys. Only 19% share costs with stakeholders
- Pest diagnostics – verification of results is done in 57% of countries.
- Resources – there is a high variance in expenditure between countries. Most countries' surveillance programmes are funded by governments. The non-NPPO work question was not answered by many countries.
- Regarding training, most countries had one training session others had none.

In summary, it appears that in most countries:

- the work on surveillance is generally not coordinated well
- the situation of inadequate funding is frequent amongst countries
-legislation not aligned with contemporary global phytosanitary requirements and generally does not support surveillance programmes.

This is the first time that an ISPM has been reviewed in such depth using an IRSS questionnaire, IRSS arranged regional meetings on the results of the questionnaire and with such a careful analysis by the IRSS.

A summary of the results from the regional meetings has been published by FAO at the following location:

(**https://www.ippc.int/index.php?id=1111050&no_cache=1&L=0**)

2.5 Asia and Pacific Plant Protection Commission Regional report on the pest surveillance

Dr Piao, Executive Secretary of the APPPC discussed the results of the APPPC review meeting. He noted for the 17 countries involved there was pest surveillance programmes coordinated under a national manager. With documentation, 70% of countries had operational manuals. With specific surveys, there were few agreements (4) to cover the costs of surveys. The funds for surveillance were disparate among the countries and there were constraints with the lack of trained staff and other resources.

There are huge differences in the surveillance undertaken between the countries attending the meeting. There were different understandings on surveillance systems. Often the organisations involved had other responsibilities.

With management, countries noted that:

- resources for surveillance were difficult to obtain for surveys and diagnostic systems,
- coordination between agencies difficult,
- it was often difficult to have stakeholder involvement,
- there was unsatisfactory coordination with trading partners,
- awareness campaigns need to be conducted.

With operational support, there is a need to support the setting of priorities. Substantial effort needs to be made into training programmes.

With technical support, guidance is needed to make up for the lack of diagnostic capability. Further tools are needed with training programmes, lists of experts, and more diagnostic protocols.

A summary of the results from APPPC member countries has been published by FAO a RAP PUBLICATION 2012/9 at the following location:

(http://www.apppc.org/index.php?id=1110802&tx_publication_pi1[showUid]=2184327&frompage=1110818&type=publication&subtype=&L=0#item)

2.6 Setting surveillance within Plant health

This session was conducted by Dr Gary Kong, Australia. He noted that diagnostic services are the base of any plant health or surveillance system. These services may be provided by NPPOs, plants protection services, research organisations, individuals, or universities. There is insufficient coordination among agencies regarding pest records to create national pest lists etc. This type of information is used by private companies, farmers, extension officers, inspection officers (PQ), agronomists, customs officers, foresters, national parks' officers and many others. The collection of pest records constitutes a form of crop protection – it is passive surveillance. But very little of this information is captured because there are no systems to undertake this coordination in most countries. Dr Kong noted that plant quarantine inspections and specific surveys provide active surveillance.

The meeting participants agreed that a country's crop protection system is of primary economic importance – and that this is funded for the benefit of the country. The diagnostic service is the basis of this system. It was stated that a diagnostic service needs: experts, laboratories, equipment, a budget, guidelines, keys, protocols, computer database and comparative specimens.

Information generated from surveillance programmes includes: pest lists, pest distribution maps, PRA information, voucher specimens, biological information, pest status information including pest free areas, crop identification, pest alerts, and pest management.

Mr Jabar bin Shaik Mohideen, Malaysia discussed the situation from the point of view of the service provider. The responsibilities of the farmer and producer need to be emphasized. But surveillance still underpins the production systems, and the trade systems regarding exports and imports. Generally, the benefits of surveillance include: improved production, sustainable production, market access, trade requirements for protection from quarantine pests, food security, protection of the environment, private business, phytosanitary measures, contingency plans, eradication programmes, and PFAs.

2.7 Examples of manual guides

Dr Lalith Kumarasinghe, New Zealand noted the development of Manual frameworks involves the production of chapter headings and chapter outlines. The outline may be written with a number of dash points.

Dr Kumarasinghe showed the meeting participants of different manuals that have been produced in New Zealand.

3. THE PRODUCTION OF MANUAL FRAMEWORKS

3.1 Manual frameworks on surveillance operational guidance

The session was introduced by Dr Jan Bart Rossel, Australia. A general link with the aim of the meeting was discussed. He said that this session would look at the "how" surveillance is

done. Dr Rossel ran through the initial list of 24 headings that had been developed with participants.

The list was discussed by participants. Mr Robert Favrin, Canada suggested the meeting consider a smaller number of chapter major headings: surveillance rationale; survey planning and design; diagnostics; information management; training; audit and verification. Mr Jabar bin Shaik Mohideen suggested there were three main areas: Planning, Implementation and Reporting.

The group discussed these proposals and whether to use a smaller number of more inclusive chapter headings or to use the more extensive list of smaller subject headings. Finally, it was agreed to use the longer list of topics but to shorten it with some modifications. The list was divided into high (H) and medium priority (M) topics.

The list examined by participants was:

1. PLANT PEST SURVEILLANCE DEVELOPMENT (H)
2. TRAINING MANUAL GUIDE FOR FIELD SURVEYS (H)
3. INFORMATION SHARING AND REPORTING (INCLUDING WARNING) (H)
4. AUDITING AND VERIFICATION (H)
5. DATABASES (H)
6. RESPONSE SURVEILLANCE (PLAN/PLANNING) INCLUDING DELIMITATION AND TRACE-BACK (H)
7. PRIORITISATON – TARGET PESTS (H)
8. TRAPPING (H)
9. SAMPLING AND INSPECTION (H)
10. PROCEDURES FOR TRACEABILITY (M)
11. OPERATIONAL MAPPING/MODELLING (M)
12. CROP LOSS-DAMAGE ASSESSMENT (M)
13. RESPONSE THRESHOLD (M)

The participants worked in five groups, each of which took a number of headings and developed chapters for manual frameworks.

The meeting then met as one group to examine the results of the small groups. Amendments were made to some of the manual frameworks. The results in the form of chapter headings and chapter outlines for many of the chapters are shown in Annex 3.

3.2 Manual frameworks on surveillance technical support

This section was introduced by Dr Lalith Kumarasinghe. The participants briefly discussed the major manual framework headings proposed by the group earlier in the meeting.

1. PLANT PEST DIAGNOSTICS
2. SURVEILLANCE TOOLS
3. INFORMATION MANAGEMENT
4. TRAINING (LAB PROCEDURES AND DIAGNOSTICS)

Dr Kumarasinghe reiterated the process of work for the groups – the development of chapter headings and chapter outlines. He gave some examples of possible results from this process.

The participants worked in four groups, each of which took one heading and developed chapters for the manual frameworks.

The meeting then met as one group to examine the results of the small groups. Amendments were made to some of the manual frameworks. The results in the form of chapter headings and chapter outlines for many of the chapters are shown in Annex 4.

3.3 Manual guides on surveillance management support

Mr Sosa introduced this session reiterating some of the results from the questionnaire. There are varying scenarios in countries but the constant factors include a lack of funds, resources, and personnel. The question he asked was - how do we deal with this? Mr Sosa proposed that countries should take small steps in dealing with the problems and use the resources that are immediately available.

Dr Kopper continued the introduction to the session. He noted that this session was not so much in the comfort zone of participants. He stated that countries must learn to use advocacy to attach the correct degree of importance to plant pest surveillance. The group that had looked at management for priority areas earlier in the meeting had suggested a number of areas including:

Policy and management

- National Strategic plan including basis for commitment (purpose for surveillance) – including stakeholders
- Legislation on surveillance (provides authority)
- Management systems for organizational arrangements (including roles and responsibilities of staff and stakeholders)
- Performance review and audit

Financial mechanisms

- Developing a sustainable funding mechanism including cost recovery, cost sharing and stakeholder and industry participation
- Commitment to infrastructure (minimum requirements needed)

Information exchange

- Establishment of information sharing mechanism at national and international levels (including pest lists) for all agencies and stakeholders involved in surveillance
- Management of pest alert and reporting mechanisms

Training

- National phytosanitary course which includes surveillance as a primary component (resourcing)
- Awareness and advocacy (including public outreach)

Dr Kopper went on to describe the system for the consideration of the topic. The meeting was divided into three groups and each examined the four areas noted above. The material that follows is a coordination of the proposals for manual frameworks, chapter headings and outlines produced by the three groups. This material is reported in some detail as it was regarded by the meeting participants and organisers as significant in the development of national surveillance in countries.

Participants developed annotated contents lists for three manual frameworks:

POLICY AND MANAGEMENT

FINANCIAL MECHANISMS

TRAINING

See Annex 5 for the details of the Manual Frameworks suggested.

4. REVIEW, RESOURCES AND FUTURE ACTIVITIES

4.1 Review of meeting

Dr Rossel asked the meeting for ideas to improve the function of the meeting. He asked for comments on the format of the meeting.

There was general agreement on the general structure of the meeting with facilitators and small groups.

The results were slightly different on the three days – the first day had more manuals and fewer chapters, the second had fewer manuals and more chapters and the third day was a mixture of both. The participants felt that this technique worked well and some suggested that the material would be used in their regions.

4.2 Future activities

Mr Sosa noted the IPPC contribution to the meeting. The meeting was funded by the APPPC and Korea.

The manual frameworks will be presented to the Capacity Development Committee (CDC) in December 2012. The CDC will be in charge of the development of manual guides – 18 are to be produced and an additional two will be added as topics from this meeting. If agreed, the work will begin in January, 2013. This work will take some 8 months. One contractor has been hired who will work on one manual framework to form a manual guide.

The CDC has regional representation. It was noted that meeting participants can contribute further by:

- Submitting additional comments to the APPPC
- Discussing the manual guides with members of the CDC representing the FAO region
- Providing expertise for chapters or suggest sources of expertise
- Providing materials to fill the chapters
- Providing funding or encouraging funding from other sources.

It was stressed that the material produced are manual guides and not standards. They are for use in the production of national manuals.

Mr Sosa described the function of the IRSS and noted the Help desk that can be used by countries. Ms Garkaje, Latvia said that the other work of the meeting was the sharing of information exchange and future activities and that this type of activity could be continued in other areas.

Mr Favrin mentioned the importance of ISPM 6 – and the links with other standards. He found the PFA standards as useful in this area and this could be integrated with ISPM 6. He suggested a diagnostic guide for this area and the integration of diagnostic protocols with the standard.

Dr Piao stated that countries use the resources referred in the meeting (eg diagnostic tools) and asked if they could be placed on the IPP and made available. He encouraged the development of projects and suggested that countries try to avoid the duplication of projects.

Ms Cahyanuati, Indonesia noted the limitations of implementing surveillance because of the limitations of availability of equipment.

Dr Nguyen Quy Duong, Vietnam stated that his country found it difficult to import material at times – he noted the NZAID project. It has been difficult to implement ISPM 6. A manual guide will help with this – using a step by step process with a prescriptive guidance. The manual guide should be linked to aid projects to help with the procurement of material.

Dr Yim, Korea noted that implementation of the process should be undertaken by countries themselves. The NPPO of each country should do this work. The manual guide will identify the gaps – and lists could be produced for future work. Many projects are in place – but if further gaps are identified, lists of proposals can be put forward to sponsors. Dr Yim encouraged participants to identify the gaps in their systems and to formulate proposals for the consideration of donors. The IPPC and APPPC could help with the development of proposals. This symposium need not be just the work of one week – further suggestions for action could be put forward.

Dr Piao agreed that gap identification is important. One of the big issues he noted was - who fills in the forms and who is doing the communication. Often incorrect information is supplied. There must be within-country coordination to make sure that there is not overlap and duplication of projects and that the information supplied is correct.

Ms Cahyaniati, Indonesia again noted the non-availability of materials for surveillance. Mr Sosa stated that the country officials must work with department leaders to develop ways to avoid import problems. Decision makers must be convinced of the need to change procedures.

Mr Sosa asked for suggestions for other additional actions to implement ISPM 6. The following suggestions were put forward

- Training using the manual guides
- Encouraging in-country placements for training (cooperation exchange among NPPOs)
- The collection of more examples of best practices
- Emphasizing the follow- up from this meeting
    - a CPM side session to showcase the manual guide and best practices
    - seeking donors to develop manuals
- Presenting outputs from the APPPC symposium at regional draft ISPM meetings next year to obtain:
    - more feedback on manual frameworks
    - other best practice cases.

Mr Sosa asked participants what other ISPMs the CPM/IRSS should be working on. Various suggestions included: ISPM 4 - PFA, ISPM 8 - pest status, ISPM 17 - pest reporting, ISPM

19 - pest lists. Mr Sai, Japan suggested that all the area standards could be considered - including PFAs, PFPSs, and ALPPs.

5. CONCLUSION OF THE MEETING

Dr Hedley thanked the participants, facilitators, Dr Rossel, Mr Stevens, Dr Kumarasinghe, Dr Kong and Dr Kopper, and Mr Sosa and Ms Villasenor from the IPPC Secretariat for their contributions to the meeting. The participation of all attending the meeting had been significant and made the meeting a success with the production of twenty manual frameworks.

The meeting had met the original aims of the APPPC in strongly moving towards the development of assistance that will help APPPC members and other countries implement ISPM 6. Priority areas for manual guide development were identified and manual frameworks for these areas developed. There is now the process of finding sponsors to be undertaken to fund the development of manual guides from the frameworks using contracted experts.

The meeting has also contributed to the work of the IRSS of the IPPC. The IRSS will be able to add the manual frameworks to the list of items it will attempt to find funds for the progress to manual guides. Overall, it is considered that these types of outputs that will be seen to be contributing to the work of FAO. This is the first time priority setting for the development of manual guides based on comprehensive questionnaire results has been undertaken. Also, it is the first time such information has been used by an expert group with global representation to develop manual frameworks.

Dr Hedley acknowledged the extensive administrative work of Dr Piao, Mr Baek, and Dr Yim in arranging the meeting with sincere thanks from the participants. The Korean team working at the meeting were thanked for their efficiency and hospitality.

Dr Yim provided some background for the meeting, also thanking participants and facilitators for their contributions. Mr Baek closed the meeting.

6. RECOMMENDED FOLLOW-UP ACTIONS

These recommendations are taken from section 4 of this report and facilitators' discussion subsequent to the meeting.

Regarding production of manual guides:

- There is some streamlining of the recommendations for manual guides from the report to reduce the duplication of some subjects
- Additional sponsors will be sought to fund authors to compile the manual guides to ensure that the comprehensive nature of the frameworks produced is not lost or fragmented
- If a series of manual guides are to be produced, the best organisation of the material should be determined. The workshop major headings could be used (management support, operational guidance, technical support) or another following the work flow (eg surveillance rationale and management, survey

planning and design, diagnostics, information management, training, audit and verification.

Regarding future meetings concerning the production of manual frameworks:

- The IRSS evaluate the recent meeting and select the more successful procedures used at the meeting for further use
- The participants agreed that other possible follow-up or related manual frameworks that could be developed include those focusing on ISPMs relating to pest free areas, pest status, pest reporting and pest lists.

Regarding capacity development:

- The Manual frameworks developed during the symposium will be proposed for inclusion in the work programme of the Capacity Development Committee (CDC) of the International Plant Protection Convention (IPPC)
- The topics developed as priority areas for the development of manual guides be recognised in future capacity development projects concerning surveillance as areas for emphasis in training exercises or the development of resources.

Regarding communication:

- The outcome of the meeting will be reported to the Commission for Phytosanitary Measures (CPM) as well as at other IPPC related meetings.

ANNEX 1

AGENDA

DAY 1

0900- 0930 Welcome – Introductions

0930- 1000 Introduction to the work of the IRSS

1000-1030 Morning coffee

1030-1200 Questionnaire and results discussion

1200-1300 Lunch

1300-1600 Selection of priority areas for manual framework production

1600-1730 Examples of Manual frameworks, Manual Guidelines, and National Manuals

DAY 2 SURVEILLANCE OPERATIONAL GUIDANCE

0900-1000 Confirmation of selection of priority areas

1000-1030 Morning coffee

1030-1730 Work on manual frameworks on subjects such as those below – but will depend on the selection of the priority areas.

- information on types of surveillance – delimiting, detection, monitoring as used for the development of pest lists, the establishment of pest free areas, pest eradication programmes etc
- guidance on the management of surveillance programmes, including the planning, operation, documentation, verification, monitoring and evaluation standard with guidance on the statistical quality and their frequency
- guidance on how to design surveillance programmes with particular guidance on specific pests
- description of example – surveillance protocol, sampling plans, …case studies
- guidance on good reporting procedures for alert systems

DAY 3 SURVEILLANCE TECHNICAL SUPPORT

0900-1000 Confirmation of selection of priority areas

1000-1030 Morning coffee

1030-1730 Work on manual frameworks on subjects such as those below – but will depend on the selection of the priority areas.

- create list of accredited diagnostic laboratories and institutes for pest identification
- pest identification tools including rapid test kits, field identification materials, pheromones for field traps

- pest identification by virtual methods
- the development of diagnostic training courses
- the promotion of plant protection clinics
- other technical equipment such as GIS technology, data logger systems
- the development of reference systems.

DAY 4 SURVEILLANCE MANAGEMENT SUPPORT

0900-1000 Confirmation of selection of priority areas

1000-1030 Morning coffee

1030-1730 Work on manual frameworks on subjects such as those below – but will depend on the selection of the priority areas.

- advice on content of legislation on surveillance
- basis for national country commitment:
    - note importance of surveillance as basis for other standards, links with food security, market access, trade facilitation (potential equivalence) and environmental protection.
    - Proposal of system that makes surveillance a permanent component of pest management, pest exclusion and biodiversity preservation programmes
- guidance on developing sustainable funding mechanisms for surveillance programmes
- establishment of information sharing mechanism at national and international levels - with international cooperation in defining international pest action at an early stage
- information on the coordination of agencies involved in surveillance programmes

DAY 5 REVIEW, RESOURCES AND FUTURE ACTIVITIES

0900-1000 Review of process for preparing manual frameworks

1000-1030 Coffee

1030-1200 Other programmes to assist in the implementation of ISPM 6

Revision of ISPM 6 … proposed amendments, additions

1200-1300 Lunch

1300-1500 Presentations by donors

Discussions with sponsors/donors on further possible initiatives – including the development of manual frameworks

ANNEX 2

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ANNEX 3

MANUAL GUIDES ON SURVEILLANCE OPERATIONAL GUIDANCE

An initial list of 24 headings as developed by participants is shown below:

Plant pest surveillance development
Databases and data usage
Early detection surveillance
Specific pest surveillance
Training manual(s) for field surveillance
- Commodity specific surveillance
- Prioritisation – target pests
- Trapping
- Sampling and inspection methods (methodology & process)
- Sample collection – information needed
- Mapping (including GIS use)
- How to use GPS
- Information sharing and reporting (includes warning)
- Response surveillance (plan/planning) including delimitation & trace-back
- Auditing and verification
- Area freedom surveillance
- Places of production surveillance (including glasshouses, orchards, nursery)
- Statistical significance – confidence levels, reliability of results (methodology)
- Response threshold (decision support, economic threshold for response)
- Verification surveillance of control measures
- Procedures for traceability
- Crop loss/damage surveillance/assessment
- Pathway surveillance
- Baseline monitoring

The list was reduced to 13 headings for Manual Frameworks . These were:

1. PLANT PEST SURVEILLANCE DEVELOPMENT (H)
2. TRAINING MANUAL GUIDE FOR FIELD SURVEYS (H)
3. INFORMATION SHARING AND REPORTING (INCLUDING WARNING) (H)
4. AUDITING AND VERIFICATION (H)
5. DATABASES (H)
6. RESPONSE SURVEILLANCE (PLAN/PLANNING) INCLUDING DELIMITATION AND TRACE-BACK (H)
7. PRIORITISATON – TARGET PESTS (H)
8. TRAPPING (H)
9. SAMPLING AND INSPECTION (H)
10. PROCEDURES FOR TRACEABILITY (M)
11. OPERATIONAL MAPPING/MODELLING (M)
12. CROP LOSS-DAMAGE ASSESSMENT (M)
13. RESPONSE THRESHOLD (M)

The H refers to High Priority and the M to Medium Priority.

These were examined by the meeting participants and chapter headings along with chapter outlines proposed where appropriate.

1. PLANT PEST SURVEILLANCE DEVELOPMENT

Chapter 1 - Planning a surveillance programme

Outline

- Purpose
    - Determine importance including regulation/legal requirements
    - Background
    - Objective of surveillance
    - Likely/expected outcome

- Review previous information
    - Data
    - Surveillance results

- Target selection
    - Pest
    - Host
    - Location

- Feasibility
    - Economic
    - Technical
    - Regulatory (laws, etc)
    - Available resources

- Requirements
    - Resources
    - Budget/funding
    - Staff/manpower and OSH
    - Timing
    - Stakeholders

- Communication
    - Reporting
    - Awareness
    - National and international
    - Contact points

- Documentation

- Diagnostics
    - Protocol
    - Expertise required
    - Reference

- Auditing
    - Audit field operations
    - Verification of results
    - Verification of methodology (including feedback loop)

Chapter 2 - Surveillance approaches and application

Outline

- General surveillance
    - Purpose
    - Scope
    - Examples of application
    - Outcomes – action and decisions (e.g. active surveillance)

- Active surveillance
    - Purpose/Scope
    - Scope
    - Examples of application
        - Pest Specific Surveillance (Chapter 3)
        - Commodity Specific Surveillance (Chapter 4)
        - Early Detection Surveillance (Chapter 5)
        - Area Freedom/PFA Surveillance (Chapter 6)
        - Pathway Surveillance (Chapter 7)
        - Places of Production Surveillance (e.g. glasshouses, nurseries, orchards, etc) (Chapter 8)
        - Baseline Surveillance includes baseline survey for current incidence and baseline monitoring eg fixed stations in crops(Chapter 9)
        - Verification surveillance (special case of area freedom).
        - Trade requirement (eg agreements between countries on requirements for proof)

Chapter 3 - Pest specific surveillance approach and application

Outline

- Introduction
- Purpose of the surveillance
- Scope
    - About the specific type of surveillance
    - Why use this type of surveillance
    - Where this type of surveillance should be used

- Methodology
    - Step-by-step instructions on how to implement pest specific surveillance
    - Data capture, analysis, storage
    - Statistical plan
        - Confidence levels required
        - Sample size
        - Frequency of surveillance
        - Sample area (i.e. how to decide)
    - Sample collection SOP
    - Tools and equipment
    - Reporting

- Examples of application

Chapter 4 - Commodity specific surveillance approach and application

Outline

- Introduction
- Purpose of the surveillance
- Scope
    - About the specific type of surveillance
    - Why use this type of surveillance
    - Where this type of surveillance should be used

- Methodology
    - Step-by-step instructions on how to implement pest specific surveillance
    - Data capture, analysis, storage
    - Statistical plan
        - Confidence levels required
        - Sample size
        - Frequency of surveillance
        - Sample area (i.e. how to decide)
    - Sample collection SOP
    - Tools and equipment
    - Reporting

- Examples of application

2. TRAINING MANUAL GUIDE FOR FIELD SURVEYS

Chapter 1 - Target pests

Outline

- Biology (live cycle, host plant)
- Characters (morphology)
- Distribution, origin
- Damage symptoms
- Economic status (significance)
- References

Chapter 2 - Survey design

Outline

- Risk identification and management
- Target area
    - Host
    - Time frame
- Survey frequency
- Survey equipment and material, supplies
- Budget (money)Human resources
- Authorization
- Administration
- Legal

Chapter 3 - Sampling and collection methods

Outline

- Survey equipment use and maintenance
- Sampling Methods and procedure
    - Transects
    - Target sites
    - Sample collection and handling
    - Sample preparation, packaging, sending, labelling
    - GPS
- Sanitation (field and equipment)

Chapter 4 - Information management

Outline

- data capture methods
    - paper based
    - electronic and digital based
- data storage
    - data base
- data analysis
    - GIS
- Data dissemination / reporting

Chapter 5 - Occupational safety

Outline

- First aid
- Emergency plan – communication /radio
- Transport

Chapter 6 - Stakeholder engagement

Outline

- Public relations
- Communication plan
    - Message
    - Target audienc
- Awareness campaign
    - Radio, TV, Internet, SMS.

3. INFORMATION SHARING AND REPORTING (INCLUDING WARNING)

Chapter 1 - Information gathering

Outline

- (horizon scanning; article mining (eg scoopit software)
- In-country sources
- Formal requests to other countries.

Chapter 2 - Reporting obligation

Outline
- Sharing with stakeholders
- Sharing between countries
- Sharing between regional organisations (NAPPO, APPPC etc)
- Sharing between international organisations (WTO, IPPC etc)

Chapter 3 - Public and professional awareness

Outline
- Multi-media (eg TV, radio, internet, journals, newspapers)

Chapter 4 - Reporting tools

Outline
- Standardised electronic reporting mechanism.

4. AUDITING AND VERIFICATION

Chapter 1 - Auditing

Outline
- In house
- Independent organisation (eg NPPO trading partner, International Advisory Committee, ISO, Food and Veterinary Organisation)
- Determine what standards, SOPs are being used for auditing purposes.

Chapter 2 - Verification

Outline
- Verifying the process (data, worker productivity, methodology)
    - Field worker operational procedures, inspector controls (log books, GPS etc)
    - lab procedures, good management practice and accreditation.
- Verifying the results
    - field – inspecting workers, cross-checking data
    - lab-expert confirmation

5. DATABASES

Chapter 1 - Capture

Outline
- Hardware requirements (PDA, phone, paper)
- Software requirements
- Data Standards
    - matching standards and user groups
    - application of standards
    - review of standards

Chapter 2 – Storage

Outline
- Software selection
- Security permissions and hierarchy of access
- Database design criteria (relational, SQL, non SQL etc)
- Programming platforms and language selection
- Data storage location and storage type
- Ownership and operational responsibility
- Governance of database

Chapter 3 - Management

Outline
- Data structure and presentation
    - Workflow structure
- Data backup

Chapter 4 - Validating/updating

Outline
- Process for data checking
- Editing permissions and responsibilities

Chapter 5 - Analysis

Outline
- Software and analysis guidelines
- Software selection
- Types of analysis
- Analysis output type

Chapter 6 - Report

Outline
- PH information systems.
    - Information flow and permissions access
    - Reporting formats (PDF, Excel, Spatiotemporal maps etc)
    - Alerts and Factsheets
    - International reporting requirements.

6. RESPONSE SURVEILLANCE (PLAN/PLANNING) INCLUDING DELIMITATION AND TRACE-BACK

Chapter 1 - Pest identification and information

Outline
- Identification and confirmation of the organism
- Biological information

        - Biology, origin, distribution, population dynamics, epidemiology, vector status
    - Significance – economic, human, environment, social
- Potential establishment and range
- Damage symptoms
- Host range and alternate hosts
- Control measures and eradication options
- Detection methods

Chapter 2 - Investigation plan

Outline
- Pathway analysis/information
- Traceback activity
- Provisional action
    - Movement control
    - Initial control
    - Buffer zone
- Budget and human resources
- Data analysis and recommendation

Chapter 3 - Delimiting survey specification

Outline
- Target area/zone (including mapping)(A, B, C...)
- Activities of different zones
- Target hosts and alternatives
- Host suitability and preference/availability
- Host range and distribution
- Sampling methods/collection/handling
- Survey period
- Equipment/logistics/budget
- Field survey guides
- Awareness campaign
- Cooperative arrangement.
- Authorisation
- Risk identification and mitigation
- Data collection method and Reporting
- Data analysis and recommendations.

7. PRIORITISATON – TARGET PESTS

Chapter 1 - Pest risk analysis

Outline
- Economic impacts
- Environmental impacts
- Societal impacts
- Likelihood
    - introduction

    - Establishment
    - Spread

Chapter 2 - Detectability (how easy is it to detect)

Outline
- Readily available tools, methodology eg pheromones commercially available
- Sampling procedures
- Identification.

Chapter 3 - Stakeholder interests

Outline
- National policy environment
- Environment for internal and external trade
- Availability of resources
- Cooperation of interested parties.

Chapter 4 - Outbreak/ incursion response

8. TRAPPING

Chapter 1 - Purpose

Outline
- Target pests
- Trap use (control, eradication, delimiting, early warning, monitoring)

Chapter 2 - Trap types

Outline
- Attractant base trap
    - Advantages and disadvantages
    - Target pest
    - Limitations
    - Cost
    - Suppliers
    - Difficulty of use
    - Maintenance
    - Specification
- Semi-chemical base trap
    - Advantages and disadvantages
    - Target pest
    - Limitations
    - Cost
    - Suppliers
    - Difficulty of use
    - Maintenance
    - Specification
- Physical trap
    - Advantages and disadvantages
    - Target pest

    - Limitations
    - Cost
    - Suppliers
    - Difficulty of use
    - Maintenance
    - Specification
- Visual base trap
    - Advantages and disadvantages
    - Target pest
    - Limitations
    - Cost
    - Suppliers
    - Difficulty of use
    - Maintenance
    - Specification

Chapter 3 - Application method

Outline

- Trapping specification
    - trap mounting and placement
    - site selection
    - host selection/host density/ target pest
    - trap location
    - concentration of attractants semiochemicals
    - trap density (monitoring and control)
    - trapping period
    - servicing and replacement
- Equipment use and services
    - sprayers and other specialised equipment.

Chapter 4 - Sample screening

Outline

- Specimen retrieval
- Criteria/characters of sample screening
    - Colour, size, damage symptoms etc
- Specimen collection, handling, processing and transportation
- Equipment, materials and supplies
- Imaging of specimens.

Chapter 5 - Data collection and reporting

Outline

- Trap information
    - Code, date of servicing, replacement etc
- Specimen information
    - Host plant, host stage, GPS (mapping), collection date, collector etc
- General information
    - Weather, location, crop management practices

- Reporting/data submission
    - Paper base, electronic and digital
    - Data base.

Chapter 6 - Quality assurance

Outline
- Staff performance reviews
    - Terms of reference
    - Report keeping
    - Time management
- Auditing
    - Compliance – procedures, equipment, supplies, data quality, placement of marked specimens etc.

9. SAMPLING AND INSPECTION

Chapter 1 - Methodology and process

Outline
- Type of sampling – random, systematic etc-symptomatic and asymptomatic
- Where – commodity, priority, borders, markets, crop region
- When – timing
- Who – NPO, farmers, contractor, stakeholder.
- Why

Chapter 2 - Sample collection

Outline
- Semple information – datasheet longitude, latitude.
- Package method
- How – techniques (netting, trapping etc)
- Transportation of samples
- Preservation and storage.

10. PROCEDURES FOR TRACEABILITY

Chapter 1 - GPS

Chapter 2 - Barcodes – tracking system

Chapter 3 - Database for sample tracking

Chapter 4 - Simple coding system – reference numbers

11. OPERATIONAL MAPPING/MODELLING

Chapter 1 – Tools

Outline

- GIS and GPS – Trimble, ESRI, Google maps, Smartphone
- Paper maps
- Data layers
    - Host distribution, pest distribution, trap points, climate
- Remote imaging
    - Aerial photos – pinewood nematode
    - Satellite photos – locusts.

Chapter 2 – Usage

Outline

- Reporting
- Information sharing
- Audit and verification
- Hot spot analysis
- For modelling
- Monitoring over time
- Day-to-day operations.

12. CROP LOSS-DAMAGE ASSESSMENT

Chapter 1 - Pictorial keys

Outline

- Whole plant
- Plant part

Chapter 2 - Ranking /rating

Outline

- incidence

Chapter 3 - Forecasting future damage

Chapter 4 - Type of pest

Chapter 5 - Place/where

Outline

- Market
- Field
- Storage
- Greenhouse

Chapter 6 - Frequency/timing

Chapter 7 - Value of damage to yield - EIL

Chapter 8 - Training

13. RESPONSE THRESHOLD

Chapter 1 - Type of pest

Outline

- Exotic vs endemic

Chapter 2 - Level of damage

Outline

- For endemic pests - Economic Threshold Level (ETL) for specific crops
- Assessment method for exotic pests – noting potential damage

Chapter 3 - Type of host

Outline

- Value of crop
    - Environment
    - Economic
    - social

Chapter 4 - Stage of development of host

Outline

- Note alternative hosts

Chapter 5 – Who

Outline

- Chain of command
    - legislative framework
    - protocols

Chapter 6 - Pest alerts

Outline

- Website
- Blog
- SMS
- Radio
- Paper

ANNEX 4

MANUAL GUIDES ON SURVEILLANCE TECHNICAL SUPPORT

14. PLANT PEST DIAGNOSTICS
15. SURVEILLANCE TOOLS
16. INFORMATION MANAGEMENT
17. TRAINING (LAB PROCEDURES AND DIAGNOSTICS)

14. PLANT PEST DIAGNOSTICS

Chapter 1 - Diagnostic laboratory

Outline
- Standards of establishment of basic diagnostic lab
- Containment level
- Tools/equipment/chemicals
- Human resources- expertise
- Legal requirements/permissions
- Safety

Chapter 2 - Diagnostic techniques

Outline
- Morphological
- Molecular
    - Test kits
    - Bar coding
- Serological
- Biochemical
- Biological
    - Indicator plant
    - Plant host list
    - Damage symptoms
- Specimen preparation
- Normal techniques
    - E-nose
    - Spectrometer
    - Auditory
    - Isotope analysis

Chapter 3 - Virtual

Outline
- Resources
    - Internet or 3G access
    - Microscope and RM equipment
    - Human resources/expertise
- Taxonomic information

    - Paper
    - Digital
    - Web-based
- Communication network
    - Internet
    - Existing networks (PaDIL, RMD, Pest net)
- Imaging
    - Quality standards
    - Taxonomic standards
    - Hardware
    - Software
- Official verification of ID
    - Security/privacy standard
    - Confidentiality MOU

Chapter 4 - Reference collection

Outline

- Reference specimens (voucher/physical)
    - Processing
    - Preservation
    - Storage, specification and standards
    - Curation
- Virtual reference collection
    - International
    - Regional
    - National
- Operation
    - Routine procedures
    - Human resources (curator)
    - Maintenance
    - Exchange of specimens (stds)
- Equipment and supplies
    - Media
    - Chemicals
    - Insect pins/consumables
- Reference collection specifications
    - Controlled environment
    - Structural requirements

Chapter 5 - Reference material

Outline

- Identification manuals
    - Paper
    - Web-based
    - Electronic
- Diagnostic protocols
    - Accredited and non-accredited
    - Peer reviewed protocols

- Other
    - List of accredited labs
    - Expertise registers

Chapter 6 - Quality management

Outline

- Lab procedures/documentation
    - Sample management/specimen tracking
    - Confirmation procedures
    - Protocols/test methods
    - ID procedures
    - Etc
- Auditing
    - Internal
    - External
- Proficiency testing
    - Internal
    - External
- Certification and accreditation
    - Specific tests
    - General tests

Chapter 7 - Risk management

Outline

- Biological risk/management and disposal
    - Biological material/ organisms
    - Chemical
    - Genetic
- Workplace health and safety
    - Procedures
- Emergency plans
    - Natural disasters
    - Operational failures (eg Power)

Chapter 8 - Field diagnostics/pest clinics

Outline

- Equipment
    - USB microscope
    - Smart phone
    - Diagnostic test kits
    - GPS
    - Cool box
    - Etc
- Safety procedures
    - Risk management
- Reference materials

    - Field guides
    - Fact sheets
    - Instructional guides
    - Web based information
    - Background technical information
- Techniques
    - Criteria/characters used for field screening (size, colour,etc)
    - Other techniques/novel techniques
- Auditing

15. SURVEILLANCE TOOLS

Chapter 1 - Site selection

Outline
- Grower information
- Identification of administrative areas
    - Geographical areas
- Production information
- Existing surveillance information
- Permission from local authorities plus information for local authorities
- Host distribution data

Chapter 2 - Field equipment

Outline
- Maps
- GPS
- Camera
- Phone
- Field guide for pests and hosts
- Information leaflet for growers
- Collection equipment – vials, alcohol, plastic bags, aspirator, cooler, net, handlens, pins, plant press, pinboard, first aid kits, field diagnostic kits,
- Specific discipline equipment – nematology, pathology, entomology, botany.

Chapter 3 - Field data collection

Outline
- Sampling protocol (determined by kind of survey eg delimiting , market access, early detection)
- Core data fields
    - Date
    - Collector
    - Location (longitude and latitude)
    - Grower name
    - Host
    - Pest
    - Damage symptom

    - Part of plant affected
    - Level of infestation
    - Level of damage
    - Insect count
- Collection method
    - Notebook
    - Smart phone
    - PDA
- Information on host distribution – for incursion response, risk identification, and area freedom.

Chapter 4 - Specimen handling and processing

Outline

- Specimen processing protocols
    - Insect
    - Mite
    - Nematode
    - Pathogens
    - Botany
- Hygiene considerations (to not spread pests)
- Labelling
- Prevent contamination of specimens
- Specimen preservation methods
- Lab submission protocols
- Identification tracking system.

Chapter 5 - Establishing and maintaining reference collections

Outline

- Protocol for preparation of
    - Insect
    - Pathogen
    - Nematode
    - Botany
- Curation protocols
- Preservation of collection
- Storage - herbarium and insectariums
- Controlled environment
- Catalogue of specimens (eg database)

Chapter 6 - Supplier lists

Outline

- Traps
- Pheromones
- Vials
- Pins
- Pinboard
- Field diagnostic kits

- GPS
- Plant presses
- Hand lenses
- Aspirator
- Killing jars
- Nets
- First aid kit
- Other collection equipment.

16. INFORMATION MANAGEMENT

Chapter 1 - Data collection

Outline

- Sources
    - Historical
        - Herbarium/museum records
        - Journal articles/expert consensus
        - Existing databases
    - First hand data (NPPO)
        - Field survey
        - Quarantine office
        - Interception data
        - Local reports
    - Secondary data
        - University/research centres
        - Industry
        - literature reviews
        - Neighbouring country reports
- Methods
    - Data tools
        - Questionnaires to farmers/growers
        - Paper forms/electronic forms
        - Recorders – voice
        - Video/pictures
        - GPS
    - Actual data
        - Specimen collection data
          Location, date, trap type, crop, weather, crop life stage, cultural practices
        - Specimen tools
          Preservation in the field.

Chapter 2 - Data information management/data storage

Outline

- National data repository – data verification and updates provided by NPPO
- Legislation
- Capacity building

    - Data security
        - Soft ware
        - Access

Chapter 3 - Data analysis

Outline
Statistics

- Lab results
- Targeted/focussed/risk based survey
- Mapping/modelling
    - GIS
    - Weather patterns
    - Remote sensing
- Pest risk assessments
- Capacity building
    - Tools and software

Chapter 4 - Communication methods

Outline

- Why –
    - Early warning/pest outbreaks/market access
    - Informing the public and vice versa
- What –
    - Pest list database/data sheet
    - Pest distribution, damage potential and forecasting
- Who –
    - Stakeholder networking
    - Information centre/entry point
    - Local (farmers) to global (including NPPO)
- How –
    - Group discussions
    - Market visits
    - Farms
    - Symposiums/seminars
    - Multimedia
    - Outreach material (booklets, fact sheets, leaflets, newsletters)
    - Community awareness
    - Industry awareness.

17. TRAINING – LABORATORY AND DIAGNOSTICS

Chapter 1 **Introduction**

Outline

- Purpose of the manual and training
- Target audience
- Minimum requirements
    - Trainer

    - Participant
    - Venue
    - Logistics
- How to use the manual

Chapter 2 - **Training Methodologies**

Outline

- Level of training (link to target audience)
    - Beginner
    - Intermediate
    - Advanced
- Training scenarios
    - Group
    - 1 on 1
    - Remote
    - Self-Learning
    - e-learning
    - Practical vs Classroom
    - Training in service (on the job)
    - In-field training (farmer field schools)
- Training method
    - Who will it apply it and to whom
    - Why use the method
    - What the method is
    - When should the method be used
    - How should it be applied
    - Where the method should be used (what situations) – provide examples
- Assistance for the trainer
    - Didactic methods
    - Training for the trainer
- Training guide and planning
    - Session plan for best practice training
    - Plan for each discipline
- Preparation for training
    - Checklist (logistics, venue, etc.)
    - Reading materials
- Assistance for trainees
    - Pre-training evaluation (e.g. questionnaire to ensure targeting training at correct level)
    - Checklist of requirements for trainees (e.g. tools such as hand lens etc.)
    - Pre-reading

Chapter 3 – **Disciplines**

Outline

- Entomology
    - Scope – description targeted the level of the audience
    - Pest characteristics
    - Infrastructure and equipment and supplies including reference collection
    - Specific Diagnostic techniques methods and techniques

- Plant Pathology (Bacteriology, Virology, Mycology etc.)
    - Scope – description targeted the level of the audience
    - Pest characteristics
    - Infrastructure and equipment and supplies including reference collection
    - Specific Diagnostic techniques methods and techniques
- Nematology
    - Scope – description targeted the level of the audience
    - Pest characteristics
    - Infrastructure and equipment and supplies including reference collection
    - Specific Diagnostic techniques methods and techniques
- Weed Science
    - Scope – description targeted the level of the audience
    - Pest characteristics
    - Infrastructure and equipment and supplies including reference collection
    - Specific Diagnostic techniques methods and techniques

Chapter 4 - General techniques

Outline

- Specimen management
    - SOPs
        - Transport and delivery system
        - Records and data base
        - Handling
        - Processing
        - Biosafety (prevent cross contamination)
        - Waste management
        - Containment
    - Diagnostics (refer to diagnostic manual)
        - Specimen preparation
        - Specimen examination
            - Microscope use including
            - Conventional (compound, stereo microscopy)
            - Special discipline techiniques
            - fluorescence and electron microscopy
        - Specimen imaging
        - Specialized diagnostic techniques
            - PCR
            - ELISA
            - Test kits
            - keys
            - diagnostic protocols
        - Storage
        - Disposal
        - Reference collection management
            - Decision
            - preparation
- Equipment management
    - Installation and calibration
    - Servicing
    - Minimum operating requirements

        - Water quality
        - Electrical supply
        - Climate control
        - Etc.
    - Storage

Chapter 5 - **General laboratory system**

Outline

- Occupational Safety and health
    - Safe operating procedures
    - Personal hygiene
        - Clothing
        - Washing facilities
    - Emergency procedures
        - Hazardous spill management
        - Escape routes
        - Fire training
        - Washing facilities (e.g. eye wash/showers)
    - Security
    - Laws and regulations
- Communication
    - Chain of command
    - Confidentiality
    - Reports
    - Minimum communication systems requirements (including internet access and use)
- Records and Data management
    - Written procedures (Documentation)
    - SOPs
    - Refer to yesterday Day 2 – databases and usage with tailored to this area

Chapter 6 - Quality assurance

Outline

- Compliance with written procedures
    - SOPs
    - Audit process (internal and external)
    - ISO compliance where applicable
- Reference laboratory
    - Specimen exchange for verification

ANNEX 5

MANUAL GUIDES ON SURVEILLANCE MANAGEMENT SUPPORT

18. POLICY AND MANAGEMENT

19. FINANCIAL MECHANISMS

20. TRAINING

18. POLICY AND MANAGEMENT

Chapter 1 – Development of national policy (rationale and vision) for surveillance

Outline

- Develop rationale
    - Recognition of international commitments – IPPC, SPS, WTO, CBD, Codex, Cites..
    - Maintenance of protection of production
        - Food security
        - Best practices examples - to show how important surveillance is these goals
    - Maintenance of pest status
        - To maintain and enhance market access
        - Best practices examples – to show how important surveillance is to these goals
    - Protection of the natural environment
        - Best practices examples – to show how important surveillance is to these goals
    - Protection of public health
        - Ants (e.g. RIFA), toxic pests (e.g. urticating hairs) [may not be IPPC but surveillance done by Plant Protection staff]
        - Best practices examples - to show how important surveillance is to these goals.
    - Demonstration of economic value
        - Economic cost from historical examples
        - Economic cost from potential worst cases
        - Potential economical benefits
        - Cost benefit business case
        - References to scientific papers demonstrating positive cost-benefit for surveillance

- Develop vision to strengthen phytosanitary surveillance aligned with national development goals
- Develop national policy
- Permanent structures to support phytosanitary programmes

Chapter 2 – Development of an advocacy plan

Outline

- Definition of audience –
    - Government agencies (Ministers, DGs of agriculture, forestry, fisheries (re aquatic plants), conservation, environment, national parks, customs, military
    - Local government or provincial or state representatives
    - Private sector – industry groups, farmers, producers, importers, exporters
    - NGOs including conservation groups
    - Academia, scientific societies, research organisations
    - Associations representing women and youth
    - Donor organisations – international and regional
- Use:
    - Strong committee for stakeholder engagement
    - Surveillance strategy
    - Public hearings
    - Coordination meetings
    - Communication plans
    - Awareness strategy
    - 1 to 1 discussions, workshops, focus groups etc.
    - Best practices – case studies.

Chapter 3 – Development of National strategy

Outline

- Define current situation
    - Status report
    - Gaps in systems
- Define vision
    - Short, medium and long term
    - Goals and objectives
- Describe means to achieve goals
    - Expected outcomes
    - Operational planning
- Prepare proposals for stakeholder and industry participation
    - Prepare guidelines.

Chapter 4 – Legislation

Outline

- Describe purpose
- Define responsible bodies
- Describe authority and powers to set regulations
- List obligations
- Include enforcement powers and penalties (to be updateable)
- Describe compensation measures
- Define reporting and documentation obligations – international and national
- List information requirement (including databases, registers and who keeps them)
- List funding mechanisms including joint arrangements (eg with industry)
- Describe labour/worker safety requirements.

Chapter 5 – Management systems for organisational arrangements

Outline

- Describe organisational structure including government agencies, local authorities (or provincial, state representatives), and stakeholders
- Describe roles and responsibilities re policy, legislation, funding, technical expertise, resources.
- Describe NPPO surveillance structure including Head of department, managers, surveillance planning, diagnostics, information management, emergency response, field inspection
- National coordination committee for surveillance
    - Coordinating information flow from organisations involved in surveillance and plant protection.
- Establishment of information sharing mechanism at national and international levels (including pest lists) for all agencies and stakeholders involved in surveillance
- Management of pest alert and reporting mechanisms.

Chapter 6 – Performance review, monitoring and evaluation

- Performance review procedures
    - Cost benefit analysis
    - Budget targets met
- Frequency of review
- Content of review
    - Policy
    - Strategic plan
    - Operational programmes
    - Communication/advocacy
    - Identification of gaps
    - Recommendation for improvements
    - Justification for continued funding
- Reviewing body
    - Internal and external.

19. FINANCIAL MECHANISMS

Chapter 1- Requirement for funding

Outline:

- Phytosanitary surveillance programmes
    - Human resources
    - Overheads
    - Equipment
    - Infrastructure
    - Facilities
    - IT systems
    - Transport
    - Training
    - Awareness programmes
    - Funding for translations

Chapter 2 - Likely sources of funds

Outline

- List possible sources of funds
    - National Budgets
    - State and provincial agencies
    - Industry and private sector
    - Donors
    - International financial institutions
    - NGOs
    - Trading Partners

Chapter 3 - Funding mechanisms

Outline

- External mechanisms
    - Agreements
        - Private sector (Internal and external)
        - Industry (Internal and external)
        - Project agreements with international bodies.
    - Cost recovery/ Cost sharing : Public/Private
        - Fees and levies(part of PC fee could go to surveillance)
        - Fees for service – certification for authorised surveillance
        - Taxes (biosecurity departure tax)
        - Charges for information gathered.
- Internal mechanisms
    - Internal budget arrangements
        - Government allocations
        - Public sector cost sharing – funding for surveillance projects
    - Legislation to allow NPPOs to charge fees
    - Allocation of proportion of fees to return to NPPO
    - Re-structure NPPO to Statutory body
    - Create a separate autonomous agency/organization.

20. TRAINING

Chapter 1 – Establish training programme

Outline

- Training
    - International surveillance management training course from the IPPC
    - Different levels of surveillance courses
        - National surveillance (phytosanitary) management course for NPPO managers
        - General public
        - Farmers
        - Schools, High schools, Universities
        - Surveyors (e.g. ant busters)
        - Private sector
        - Training for inspectors/extension workers

        - Researchers
        - Media people.
    - National surveillance management course Topics
        - Forecasting
        - Plant inspection
        - Diagnosis
        - Sampling (including confidence levels)
        - Surveying
        - Pest data recording
        - Budgeting
        - GPS/GIS tools
        - Resources including people management an d equipment
        - Customs service
        - Sample collection/processing
        - Survey analysis/analysis of results
        - Reporting
            - Results
            - Management
        - Communication
        - Planning - how to plan (incl. emergency action planning)
- Management of programme
    - Funding
        - Budget for translation
        - National funding plan (in country)
    - Planning, implementing, reporting, leadership
- Capacity building
    - Training of trainers
    - Credit for course completion.

Chapter 2 - Awareness and advocacy (including public outreach)

Outline

- Strategic Communications strategy
    - Identify target audience
        - Farmer Field Schools
    - Media to be used
        - Promotional videos
        - Internet
        - Printed material
    - Activities
        - School competitions
        - Seminars/symposiums
        - Field days – festivals
    - Standardize the message – develop a template
        - Include counter message to avoid/address bad publicity (ie. when detecting incursions)